153

PART V.

SUPPLEMENTAL PROVISION.

Power to employ additional police in places where mischief to telegraphs is repeatedly committed.

33. (1) Whenever it appears to the Local Government that any act causing or likely to cause wrongful damage to any telegraph is repeatedly and maliciously committed in any place, and that the employment of an additional police-force in that place is thereby rendered necessary, the Local Government may send such additional police-force as it thinks fit to the place, and employ the same therein so long as, in the opinion of that Government, the necessity of doing so continues.

(2) The inhabitants of the place shall be charged with the cost of the additional police-force, and the District Magistrate shall, subject to the orders of the Local Government, assess the proportion in which the cost shall be paid by the inhabitants according to his judgment of their respective means.

(3) All moneys payable under sub-section (2) shall be recoverable either under the warrant of a Magistrate by distress and sale of the movable property of the defaulter within the local limits of his jurisdiction, or by suit in any competent Court.

(4) The Local Government may, by order in writing, define the limits of any place for the purposes of this section.

D. FITZPATRICK,
Secretary to the Government of India.

EDUCATION.

NOTIFICATIONS.

The 25th November 1885.

The Engineering School at Bangalore having been abolished, it is hereby notified that the Mysore Government is prepared to grant annually, four scholarships of Rs. 8 per mensem each tenable for 2½ years (in addition to the ordinary school fees,) to candidates from the Mysore Province who succeed in gaining admission, by competition, into the Upper Subordinate Class of the Madras Civil Engineering College to enable them to prosecute their studies in that Institution.

II. Successful candidates should submit their applications for the scholarships and fees, to the "Secretary to the Government of Mysore, Educational Department," who will select the four highest in the list, in the event of there being more than that number of successful candidates.

III. The scholarships will be granted on the following conditions :—

(1) The candidates must be natives of Mysore.

(2) They must produce the certificates of physical fitness and age, required by the rules of the Madras Civil Engineering College, from the Senior Surgeon to the Mysore Government.

IV. After passing their final examination and obtaining certificates as Supervisors and Overseers, such of them as may obtain admission into the Mysore Public Works Department will be allowed scholarships for one year longer at the rates of Rs. 30 and 25 per mensem respectively, to enable them to acquire a practical knowledge of their duties.

V. Intending candidates are referred to the notification by the Government of Madras, Educational Department, No. 33, dated 16th July 1885, published in the *Fort St. George Gazette*, page 538 (re-published below) which contains the rules regarding the admission of candidates, by open competition, into the Madras Civil Engineering College.

By order,
L. RICE,
Education Secretary.

NOTIFICATION.

Ootacamund, July 16, 1885.

No. 33.—The following Code of Rules relating to the constitution and work of the Madras Civil Engineering College, the subsequent training of students, and their selection by the Department of Public Works, has been sanctioned by Government and will have effect from 1st January 1886 :—

Preamble.—The College, which is affiliated to the Madras University, will afford theoretical and practical instruction in subjects qualifying Europeans and Natives of India for the professions and callings set forth in article III, in view of fitting them for employment in such capacity by Government, by Local and Municipal Boards, and by other agencies

Students passing the higher course in Engineering are at the same time prepared for the B. C. E. Degree of the Madras University.

ARTICLE I.

The responsibility for the discipline and management of the College is vested in the Principal, under the control of the Director of Public Instruction.

ARTICLE II.

All final examinations will be conducted by an independent Board of Examiners, consisting of a President and two Members, to be appointed by Government for a term of three years. They shall receive such remuneration as shall from time to time be fixed by Government. When necessary, the Board may, with the sanction of Government, employ Assistant Examiners. The decision of the Board of Examiners in regard to the qualifications of any students appearing for examination shall be final. The names of all students declared by the Board to have passed a final examination shall be published in the *Fort St. George Gazette.*

ARTICLE III.

The classes to be formed are—

(1) Civil Engineers.
(2) Mechanical Engineers.
(3) Engineer Subordinates.
(4) Surveyors.
(5) Draughtsmen.
(6) Sub-Overseers, Maistries, and Artizans.

ARTICLE IV. ADMISSION.

(1) The number of students to be admitted annually will, for the present, be limited to 15 in the Civil and Mechanical Engineering classes taken together ; to 30 in the class for Engineer subordinates ; to 15 in the class for Surveyors ; to 20 in the class for Draughtsmen.

N. B.—These numbers will be liable to reduction, which will be notified one month before the entrance examination, until the college accommodation has been improved and enlarged to meet requirements.

The number to be admitted to the other classes will be notified yearly. Admission shall be once a year : (1) For the Engineer classes, on last Monday in January ; (2) for the Upper Subordinate classes, on first Monday in August ; (3) for the junior classes, on last Monday in January.

(2) Candidates for admission to the Civil and Mechanical Engineering classes must be between the ages of 17 and 21 years, to the Engineer Subordinate class between the ages of 16 and [illegible]ears, and to the other classes between the ages of 16 and 22 years, on the 31st December preceding the year of admission.

(3) Candidates for admission to the Civil and Mechanical Engineering classes must produce a certificate of having passed the First Examination in Arts of the Madras or of any other Indian University ; to the Engineering Subordinate class, a certificate of having passed the Matriculation Examination, of the Madras or any other Indian University ; to the Surveyors and Draughtsmen classes, except when specially exempted, a certificate of having passed the Middle School Examination. For the sixth class selection will be made from the sons of artizans or maistries, or from youths who have already had practical training in some of the building trades.

(4) All candidates must produce satisfactory testimony of good character, physical fitness, age, and freedom from liability to small-pox. Candidates whose certificates are unsatisfactory in any respect will be excluded from the test for admission.

(5) Admission to the Civil and Mechanical Engineering classes shall be decided by open competition in the following branches of mathematics; but, to insure a high standard of general knowledge, to the total marks obtained in mathematics will be added one-half of the marks obtained in the F. A. Examination :—

	Marks.
Arithmetic	100
Algebra, including quadratic equations and the binomial theorem ..	75
Geometry (the first four books) and the sixth book of Euclid ..	75
Mensuration	50
Trigonometry, including the solutions of plane triangles	100
Total	400
F. A. Examination	300
Grand Total	700

Candidates failing to obtain one-third of the combined total marks shall not be admitted. Selection shall be made in order of merit, provided that, if four Europeans and Eurasians and three Muhammadans are not within the first fifteen, the number under each may be made good in order of merit from the other qualified candidates. Before joining the College, the candidates shall inform the Principal whether they intend to be civil or mechanical engineers.

(6) The fee for admission to this examination shall be Rs. 10.

(7) Admission to the Engineer Subordinates class shall, except in the case of soldier students, *mutatis mutandis*, be made on the same principles.

The examination in mathematics shall be as follows :—

	Marks.
Arithmetic	125
Algebra	75
Geometry	100
Total	300
Proportion of marks in the Matriculation Examination ..	225
Grand Total	525

(8) The names of candidates who have qualified in the above examination shall be published in the *Fort St. George Gazette*. The fee for admission to this examination shall be Rs. 5. From this fee soldiers will be exempted.

(9) *Soldier Students.*—Non-commissioned officers and soldiers of Her Majesty's British service desirous of qualifying for employment in the Public Works Department will, to the number of five annually, be admitted to the College on passing an entrance examination in arithmetic and English. After one year's study of arithmetic, algebra, and vernacular language, they will, provided they pass a satisfactory examination in these subjects, join the subordinate class for the ordinary theoretical and practical courses. Each student will draw a stipend of Rs. 10 per mensem for three-and-a-half years, commencing from the date of joining the subordinate class. His pay, rations, and clothing will be drawn from his regiment throughout the whole course of study. A fixed proportion between the number of soldiers and civilians to be appointed to the Public Works Department will be established.

(10) Admission to the remaining classes shall be regulated by the order in which the candidates have passed the Middle School or some higher examination, the selection proceeding from those that have passed a higher examination to those who have passed a lower.

ARTICLE V.

The course and subjects of study in the several classes shall be as follows :—

(1) CIVIL AND MECHANICAL ENGINEERING.

(*a*) Theoretical—three years. The theoretical course will comprise the following studies :—

I. Pure Mathematics.

Arithmetic and algebra, plane geometry, and mensuration, trigonometry and algebraic geometry. Differential and integral calculus.

II. Applied Mathematics.

Mechanics and hydro-mechanics.

III. Physics.

Experimental physics. Inorganic chemistry, theoretical (including metallurgy) and practical (including elementary knowledge of qualitative analysis).

Elementary geology.

IV. Drawing.

Practical or descriptive geometry.
Orthographic projection. Architectural drawing. Machine drawing.
Free-hand, perspective, and model drawing.

V. Language.

Tamil or Telugu.

NOTE.—Tamil to be obligatory for Natives of Telugu districts and *vice versâ*. The choice of one of these two languages to be open to all other students.

VI. Engineering.

Building materials.
Building construction and architecture.
Applied mechanics.
Earthwork, roads, and railways.
Hydraulics, including bridges and irrigation works.
Principles of mechanism.
Prime movers, steam engines, and hydraulic machinery.
Designs, specifications, and estimates.

VII. Surveying.

Instruments.
Surveying and levelling in the field.
Calculations and topographical drawing.

(*b*) The final examination in the following subjects—

FIRST YEAR.

I. Pure Mathematics.

Arithmetic and algebra.
Plane geometry.
Mensuration.
Trigonometry.

IV. Drawing.

Practical or descriptive geometry.

SECOND YEAR.

I. Pure Mathematics.

Algebra and geometry.

II. Applied Mathematics.

Mechanics and hydro-mechanics.

V. Language.

Tamil or Telugu.

VI. Engineering.

Building materials.
Building construction.
Hydraulics.

shall be held at the end of the first and second year respectively. The marks obtained in these examinations shall be included in the grand total of marks at the final examination.

NOTE.—The term examinations shall cover all the subjects studied during the term, but the subjects mentioned above will be finally disposed of at the end of the first and second years respectively.

(*c*) The final examination at the termination of the whole course shall be confined to the following subjects :—

Pure Mathematics.

Differential and integral calculus.
Physics.
Experimental physics.

Inorganic chemistry, theoretical (including metallurgy) and practical (including elementary knowledge of qualitative analysis).

Drawing.

Orthographic projection.
Architectural drawing.
Machine drawing.
Free-hand, perspective, and model drawing.

Engineering.

Architecture.
Applied mechanics.
Earthwork, roads, and railways.
Principles of mechanism.
Prime movers, steam engines, and hydraulic machinery.
Designs, specifications, and estimates.

Surveying.

Instruments.
Surveying and levelling in the field.
Calculations and topographical drawing.

Candidates obtaining one-third of the marks under each head and half on the whole shall pass. They shall be arranged in two classes in order of merit, the first or honor class containing those who have obtained at least three-fourths of the total marks.

(*d*) The progress of students in their studies is tested by periodical examinations and by assigning values to the drawing, surveying notes, &c., executed by them ; these marks shall count towards the final total examination marks.

(*e*) PRACTICAL COURSE.

Civil Engineers.

After completing the theoretical course, the pupils of the Civil Engineer class will spend one year in the Public Works Workshop, going through the carpenter's shop, the smithy, the foundry, and the fitting shop. They will then be placed for one year under the Public Works Department, and will be stationed at places where large works are in progress. They will be regularly instructed in the practical details of brick-making, brick-laying, quarrying, blasting, masonry, building of all sorts, the management of labor, accounts, &c.

Mechanical Engineers.

The course will comprise two years of practical study at the chief workshops of the presidency.

(2) ENGINEERING SUBORDINATES.

(*a*) The theoretical course, which extends over 2½ years, will embrace the following subjects :—

I. Mathematics.

Arithmetic and algebra.
Geometry and mensuration.
Trigonometry.
Elementary statics.

II. Drawing.

Geometrical drawing.
Orthographic projection.
Mechanical drawing (buildings, irrigation works, models, and machines).
Free-hand drawing.

III. Language.

Tamil or Telugu.

IV. Surveying.

Chain and compass.
Box sextant and plane table.
Theodolite.
Levelling.
Topographical drawing.

V. Engineering.

Building materials and construction.
Hydraulics, bridges, and irrigation works.
Earthwork and roads.
Strength of materials.
Elements of mechanism and the steam engine.
Designing and estimating.

(*b*) The final examination in the following subjects—

FIRST YEAR.

I. Mathematics.

Arithmetic and algebra.
Geometry and mensuration.

II. Drawing.

Geometrical drawing.

SECOND YEAR.

III. Language.

Tamil or Telugu.

V. Engineering.

Building materials.
Building construction.

shall be held at the end of the first and second years respectively. The marks obtained in these examinations shall be included in the grand total of marks at the final examination.

NOTE.—The term examinations shall cover all the subjects studied during the term, but the subjects mentioned above will be finally disposed of at the end of the first and second years respectively.

(*c*) The final examination shall be in the following subjects :—

Mathematics.

Trigonometry.
Elementary statics.

Drawing.

Orthographic projection.
Mechanical drawing (buildings, irrigation works, models, and machines).
Free-hand drawing.

Surveying.

Chain and compass.
Box sextant and plane table.
Theodolite.
Levelling.
Topographical drawing.

Engineering.

Hydraulics, bridges, and irrigation works.
Earthwork and roads.
Strength of materials.
Elements of mechanism and the steam engine.
Designing and estimating.

Candidates obtaining one-third of the marks under each head and half on the whole shall pass. They shall be arranged into two classes in order of merit, the first containing those who have obtained at least three-fourths of the total marks.

(*d*) The progress of students in their studies is tested by periodical examinations and by assigning values to the drawing, survey notes, &c., executed by them, but these marks shall count towards the final total examination marks.

(*e*) The practical course will comprise one year of practical study in workshops and one year on large engineering works, on which instruction will be afforded similar in character to that given to the Civil Engineer pupils.

(3) SURVEYORS' CLASS.

The courses of study, which extend over two years, shall be as follows :—

First Year.

Printing, scales, conventional signs, chain surveys.
Prismatic compass surveys.
Adjustment of levels.

Second Year.

Levelling.
Theodolite and sextant.
Traverse.
Plane tables.

Term examinations will be held for the class at the close of each year, and a final examination on the completion of the course.

The rules regarding examinations shall be the same as those of the Engineering Subordinate class, and the papers set shall be the same as those set to that class in the above subjects.

Three classes of certificate to be awarded on the following percentages of marks, total and for each subject respectively :—

First class	75	66
Second class	66	50
Third class	50	33

(4) DRAUGHTSMEN'S CLASS.

The courses of study, which will extend over two years, shall be as follows:—

(*a*) Preliminary, including the use of drawing instruments, printing, geometrical drawing, scales, &c.

(*b*) Copying and coloring architectural and topographical drawings.

(*c*) Drawing buildings, bridges, and irrigation works from specification, from models, and from actual measurements.

(*d*) Estimating, comprising taking out the quantities for buildings, bridges, and irrigation works, from plans and notes.

(*e*) Mechanical drawing.

(*f*) Free-hand drawing.

Term examinations will be held for the class at the close of each year, and a final examination on the completion of the course.

The rules regarding examinations shall be the same as those of the Engineering Subordinate class, and the papers set shall be the same as those set to that class in the above subjects.

On the aggregate results, first-class, second-class, or third-class certificates will be awarded.

Candidates obtaining 75 per cent in each subject and 85 per cent on the total shall receive first-class certificates; those obtaining 66 per cent in each subject and 75 per cent on the total, second-class certificates; those obtaining 50 per cent in each subject and 66 per cent on the total, third-class certificates.

(5) SUB-OVERSEERS, &c.

The courses of study shall be—

Arithmetic.
Elementary geometry.
Mensuration.
Scales.
Plan-drawing.
Elements of engineering.

No examinations will be held, but a certificate of attendance shall be given by the Principal after a minimum period of one year's regular study. The instruction shall be given in Tamil and Telugu; the class an evening one.

ARTICLE VI. FEES.

(*a*) *Civil and Mechanical Engineer Class.*

The fee is fixed at Rs. 85 for each term of six months, payable in advance; or, if candidates so desire, they will be permitted to pay the same by monthly instalments at the discretion of the Principal of the College; but in either case a deposit of Rs. 100 will be demanded at the outset.

A student may compound for the whole theoretical course by the payment of a fee of Rs. 400 in advance. No fee will be demanded for the practical course.

(*b*) *Engineer Subordinate Class.*

The fee is fixed at Rs. 25 for each term of six months, payable in advance, or by monthly instalments as above, with a deposit of Rs. 50 at the outset, or Rs. 125 for the whole theoretical course payable in advance. No fee will be demanded for the practical course.

(*c*) For the Surveyors and Draughtsmen classes, a terminal fee of Rs. 15 to be paid in advance.

(*d*) For the Sub-Overseer and Maistry class, no fee shall be required except a registration fee of one rupee.

NOTE.—Fees will, under no circumstances, be returned after a student has been admitted to the institution.

ARTICLE VII. CERTIFICATES.

(*a*) The Board of Examiners shall issue under their signatures a certificate to each candidate, setting forth the class of study in which he has qualified; but, in the case of students of the Engineer and Engineering Subordinate classes, the final certificate in the nature of a diploma shall be issued under the signatures of the Principal of the College and of the Director of Public Instruction in proof that the student concerned has satisfactorily completed the prescribed practical course.

(*b*) A candidate who has failed to obtain a certificate from the Board at the final examination may appear before the Board for examination at any subsequent year, provided he is certified to have put in the necessary attendance at the College and pays a fee as follows :—

	Rs.	As.	P.
Civil and Mechanical Engineers	25	0	0
Engineer Subordinates	15	0	0
Other classes	7	8	0

(*c*) The names of the candidates so passing shall be published in a separate list, and they shall simply be declared to have satisfied the Board of Examiners.

ARTICLE VIII.

The following scholarships and prizes are allowed for students during their College course :—

One scholarship of Rs. 30 per mensem, tenable for three years, to the candidate who passes first in the admission examination for the Civil and Mechanical Engineer classes—to be forfeited for misbehaviour or other good cause.

Two scholarships of Rs. 10 per mensem each, tenable for two-and-a-half years, to the two candidates highest on the list in the admission examination for the Engineering Subordinate class. These scholarships shall, however, be re-awardable after each annual examination.

A gold medal of the value of Rs. 120 will be awarded to the student who passes first in the final examination for Civil and Mechanical Engineers.

A gold medal of the value of Rs. 60 will be awarded to the student who passes first in the final examination for Engineer subordinates.

Silver medals of the value of Rs. 10 each will be given to the student who passes first in the final examination in each of the other branches.

ARTICLE IX. PRACTICAL COURSES.

Civil and Mechanical Engineers.

During the final year of practical training on works, subsistence allowance of Rs. 50 per mensem for Europeans and Eurasians and Rs. 25 per mensem for Natives will be granted. Such allowances will however, be contingent on the good conduct and satisfactory progress of the student under instruction; and, on proof of misconduct or idleness, the allowances may be cut down or withdrawn altogether by the officers in charge of the works.

Engineering Subordinates.

In the case of the Civil and Mechanical Engineer pupils, no fee will be exacted during the workshop year; and during the year of practical study on works stipends will be granted of Rs. 30 per mensem for Europeans and Eurasians and Rs. 20 per mensem for Natives, subject to the conditions of good conduct, regular attendance, &c.

Soldier students will, during the workshop course, draw pay, rations, and clothing from their regiments and the stipends prescribed for the theoretical course. During their year of practical training on works they will cease to draw those allowances and will be brought on to the Public Works Department scale of establishment as apprentice overseers, drawing the pay and allowances laid down in the Public Works regulations.

All scholarships and other allowances during the practical course will be debitable to the Public Works Department.

ARTICLE X. PROSPECTS OF STUDENTS.

(1) *Civil and Mechanical Engineers.*

One appointment annually as Assistant Engineer, Third Grade, in the Public Works Department, will for the present be conferred on the student highest on the list at the final examination, who has also obtained the degree of B. C. E. To those next on the list, appointments as Supervisors, Second Grade, will be offered in order of merit. The number of appointments to be so awarded will be in proportion to the requirements of the service and will be fixed by the Chief Engineer. The number so determined on will be announced annually at least six months before the final college examination. It is to be understood, however, that all vacancies in the supervisor grade will not be filled by selection from the most distinguished of the passed students of this class, as a portion of such vacancies must be reserved for the best qualified subordinates of the Overseer grade.

(2) *Engineer Subordinates.*

Vacancies in the Overseer grades of the Public Works Establishment will be filled by passed men in the order of merit. Prior to each entrance examination, notice will be given of the number of such appointments likely to become available for competition by the then entering batch of candidates.

(3) *Other Classes.*

Surveyors.

There are no permanent appointments available in the Public Works Establishment for surveyors only; but, when the services of temporary men are required for special surveys not undertaken by the Public Works subordinate staff, the officers in charge are instructed to select for such employment only passed surveyors of the Civil Engineering College.

Draughtsmen.

Certificated students of this class will be appointed to the Public Works Department as draughtsmen and estimators as vacancies occur. The course of instruction having been extended and the standard for certificate having been raised, passed students under these rules will be entitled to the improved salaries for the different classes of draughtsmen, which will be notified hereafter.

NOTE.—It is the duty of the Principal to render all reasonable assistance to passed students, who have failed to obtain a footing in the Public Works Department, in seeking employment under Local and Municipal Boards and other agencies. With this view, lists of qualified men, with remarks as to their attainments, conduct, &c., will be circulated annually to Local Fund Boards and Municipalities, with recommendations that they may be employed in suitable posts when opportunities offer.

ARTICLE XI. GENERAL.

(1) Students in the Civil and Mechanical Engineer classes are expected to appear for the B. C. E. Degree Examination, but they are discouraged from appearing until they have completed the three years' theoretical course.

(2) All students must provide themselves with the text-books in use and with the necessary apparatus, instruments (except surveying instruments), &c. They will, with the exception of military students, be non-resident. Strict observance of the standing rules of the institution as regards attendance, discipline, &c., will be expected from all.

(3) Students during their practical course shall not be under the supervision of the Principal of the College, but officers under whom they are serving will be required in the Public Works Department to furnish to the Principal half-yearly reports of their progress in such form as may from time to time be prescribed by Government.

E. F. WEBSTER,
Chief Secretary.

163

The 28th November 1885.

CERTIFICATES—SPECIAL TEST EXAMINATIONS.

Candidates who passed in one or more tests at the Special Test Examinations held in May 1885, and whose names appear in the classified lists published in the Supplements to the *Fort St. George Gazette* under dates the 29th May ; 9th and 16th June ; 7th, 17th, 24th and 31st July ; 7th August ; and 4th September last will be furnished with certificates on applying, on or after the 2nd proximo, to the Collectors of the Districts in which they were examined. Those examined in Travancore and Bangalore should apply to the Resident of Travancore and the Director of Public Instruction, Bangalore, respectively.

2. In applying for certificates, each candidate should state the office he holds.

DEPUTY COLLECTOR AND MAGISTRATE'S TESTS.

All persons who completed the Deputy Collector and Magistrate's Tests at the last Special Test Examinations are requested to notify the same to the Secretary to the Commissioner for U. C. S. Examinations, Madras, *at their earliest convenience.* The date of passing each test and the page of the Gazette containing the name should be distinctly given.

L. RICE,
Education Secretary.